



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,852	05/17/2006	Dietmar Van Der Linden	R.307220	8908
2119 7590 05/22/2009 RONALD E. GREIGG GREIGG & GREIGG P.L.L.C. 1423 POWHATAN STREET, UNIT ONE ALEXANDRIA, VA 22314				
EXAMINER MCALISTER, WILLIAM M				
ART UNIT		PAPER NUMBER		
3753				
MAIL DATE		DELIVERY MODE		
05/22/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/579,852

Applicant(s)

VAN DER LINDEN ET AL.

Examiner

WILLIAM MCCALISTER

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/8/2009 (amendment).
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8, 10, 12, 13, 15-17, 19-22 and 24-27 is/are pending in the application.
4a) Of the above claim(s) 12, 13, 16, 17, 20-22 and 24-27 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 8, 10, 15 and 19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-849)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☒ Other: See Continuation Sheet

Continuation of Attachment(s) 6). Other: translation of french patent 981999.

DETAILED ACTION

Claims 1-7, 9, 11, 14, 18 and 23 have been cancelled. Claims 12, 13, 16, 17, 20-22 and 24-27 have been withdrawn. Claims 8, 10, 15 and 19 are pending for immediate consideration.

Claim Objections

1. Claim 15 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 10 repeats the limitations found at lines 17-21 of claim 8.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8, 10, 15 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. How can the faces form an angle with the longitudinal axis of the bore, since the faces do not intersect the longitudinal axis of the bore?

- b. Claim 1, line 3 refers back to the "seat". Is this the "valve seat", as used in line 3 and lines 4-5?
- c. Claim 1, lines 6-7, 8, 10, 11, 14, 16-17, 18 and 20 refer to "the seat face". Is this the "conical seat face" introduced at line 5?
- d. Claim 1, lines 14-15 and lines 16-17 refer back to "the face, adjoining the seat face toward the portion of the bore having the large diameter" and "the face which adjoins the seat face toward the portion of the bore having the large diameter", respectively. There are no antecedent bases for these limitations in the claim. Are these the "face which forms a larger acute angle with the longitudinal axis of the bore", introduced at lines 9-10?
- e. Claim 1, lines 17-18 and 20-21 refer back to "the face adjoining the seat face toward the portion of the bore having the small diameter". There is no antecedent basis for this limitation in the claim. Is this the "face which forms a smaller acute angle with the longitudinal axis of the bore", introduced at lines 12-13?

Claim Rejections - 35 USC § 102

- 4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
- 5. Claims 8, 10 and 15 as understood are rejected under 35 U.S.C. 102(b) as being anticipated by Harbison (US 1,935,978).

Regarding claims 8 and 10, Harbison discloses, in a valve for a high-pressure pump of a fuel injection system for an internal combustion engine (intended use met by Harbison's capability of being so used), the valve having a valve member (11) which cooperates with a valve seat (16) formed in a housing part (10, 12, 15) on which seat the valve member rests when the valve is closed in order to close a bore through the housing part (as shown in FIG 2), the valve seat having an at least approximately conical seat face (16) which is located at a transition of the bore from a portion of small diameter to a portion of large diameter (as seen in FIG 3), the seat face forming an acute angle with the longitudinal axis of the bore (as understood), the improvement:

wherein the seat face, on its side oriented toward the portion of large diameter, is adjoined by at least one face (lower extent of curved face 17) which forms a larger acute angle with the longitudinal axis of the bore than the seat face (as understood),

wherein the seat face, on its side oriented toward the portion of small diameter, is adjoined by at least one face (upper extent of curved face 18) which forms a smaller acute angle with the longitudinal axis of the bore than the seat face (as understood).

wherein the face (lower extent of curved face 17) adjoining the seat face toward the portion of the bore having the large diameter, is adjoined by at least one further face (upper extent of curved face 17) which forms a larger acute angle with the longitudinal axis of the bore than the face which adjoins the seat face toward the portion of the bore having the large diameter (as understood), and

wherein the face (upper extent of curved face 18) adjoining the seat face toward the portion of the bore having the small diameter is adjoined by at least one further face (lower extent of curved face 18) which forms a smaller acute angle with the longitudinal axis of the bore than the face which adjoins the seat face toward the portion of the bore having the small diameter (as understood).

(Note that the term "face" reads on surfaces which are curved in cross-section, as well as those which are flat in cross-section.)

(Also note that the recitations found in the preamble are not essential to understanding the body of the claim, and that the preamble therefore has not been given patentable weight.)

Regarding claim 15, the claimed method of machining the surfaces would not impart any distinctive structural characteristics, and this recitation therefore does not further define the claimed valve.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 8, 10 and 15 as understood are also rejected under 35 U.S.C. 103(a) as being unpatentable over Citroën (French Patent No. 981999, translation attached).

Regarding claims 8 and 10, Citroën discloses, in a valve for a high-pressure pump of a fuel injection system for an internal combustion engine (intended use met by Citroën's capability of being so used), the valve having a valve member (the "movable organ", as translated) which cooperates with a valve seat (see annotated close-up of FIG 5 below, in light of p. 1, ¶¶3 of the translation) formed in a housing part (see annotated FIG 5) on which seat the valve member rests when the valve is closed (inherently; it's a valve seat) in order to close a bore through the housing part (see annotated FIG 5), the valve seat having an at least approximately conical seat face which is located at a transition of the bore from a portion of small diameter to a portion of large diameter, the seat face forming an acute angle with the longitudinal axis of the bore (as understood), the improvement:

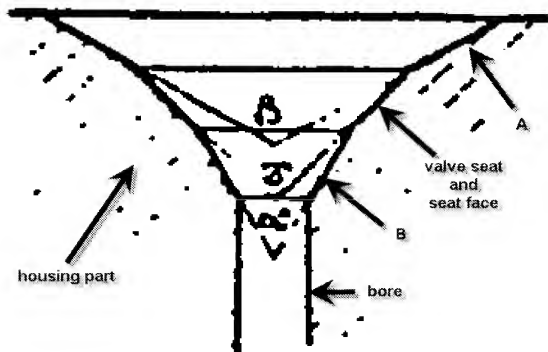
wherein the seat face, on its side oriented toward the portion of large diameter, is adjoined by at least one face ("A" of annotated FIG 5) which forms a larger acute angle with the longitudinal axis of the bore than the seat face (as understood), and

wherein the seat face, on its side oriented toward the portion of small diameter, is adjoined by at least one face ("B" of annotated FIG 5) which forms a smaller acute angle with the longitudinal axis of the bore than the seat face (as understood).

Citroën does not disclose an additional face which forms the largest acute angle, or an additional face which forms the smallest acute angle with the axis of the bore (as understood). However, it would have been obvious to one of ordinary skill in the art at the time of invention to provide two additional inclined faces, since mere duplication of the essential working parts of a device (i.e., adding more inclined faces) is generally seen as involving only routine skill in the art.

(Note that the recitations found in the preamble are not essential to understanding the body of the claim, and that the preamble therefore has not been given patentable weight.)

Fig. 5



8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harbison in view of Trudeau (WO 99/64202).

Harbison discloses the invention as claimed (see the analysis above), with exception to the hardened seat. Trudeau teaches that it was known in the art at the time of invention to harden such a valve seat. To extend the operational life of Harbison's valve seat, it would have been obvious to harden it, as taught by Trudeau.

9. Claim 19 is also rejected under 35 U.S.C. 103(a) as being unpatentable over Citroën in view of Trudeau.

Citroën discloses the invention as claimed (see the analysis above), with exception to the hardened seat. Trudeau teaches that it was known in the art at the time of invention to harden such a valve seat. To extend the operational life of Citroën's valve seat, it would have been obvious to harden it, as taught by Trudeau.

Response to Arguments

10. Applicant's arguments with respect to the Talaski and Trudeau references have been considered but are moot in view of the new ground(s) of rejection. Trudeau has been used only to show that seat hardening was known, and not to teach the configuration of seat faces.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **WILLIAM MCCALISTER** whose telephone number is (571)270-1869. The examiner can normally be reached on Monday through Friday, 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WILLIAM MCCALISTER/
Examiner, Art Unit 3753

/John Rivell/
Primary Examiner, Art Unit 3753

WM
5/20/2009